DRAFT – 12/11/2001

Docket No. JBP 438

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Seiberg, et al.	
Serial No.	:	09/206,249	Art Unit: 1651
Filed	:	December 7, 1998	Examiner: M. Meller
For	:	METHOD FOR REGULATING PHAGOCYTOSIS	

#23
A.G.J
4/24/03

DECLARATION OF KATHARINE MARTIN

I, Katharine Martin, hereby declare:

1. I am currently employed by Johnson & Johnson Consumer Companies, Inc. in the capacity of Manager, Pharmacology. I began employment with Johnson & Johnson Consumer Products, Inc. in 1990 as Scientist, *In Vitro* Toxicology.

2. I received a Bachelors of Science degree from the University of Bath in England. I am knowledgeable in the area of protein activity due to my experience in Biological Sciences.

3. Prior to 1986, it was well-known to those skilled in the art of protein biochemistry that the conformation of proteins, particularly their native tertiary and quaternary structure are important for such proteins' activity. The term "activity" is defined as a physiological process or participation in a biochemical reaction, e.g. the ability of an enzyme to cause a modification of substrate. In order to be active, proteins should retain their native structure. Proteins will not be active once they are subjected to forces that tend to disrupt their native structure physically or chemically and, thereby, denature them. Forces that can denature proteins include, but are not limited to, pH changes, detergents and excessive heating. (See, e.g., Biological sciences, 4th edition, Keton and Gould, eds., chapter 3, e.g. p.67, 1986).

4. Soybeans were first cultivated in Asia as a crop rotation material (circa 1134-246 BC) (Soybeans, Chemistry, Technology and Utilization, Edited by K. Liu, page 1-3, history, 1999.). During this time, soybeans were not consumed as food due to serious gastric distress that resulted from eating the raw bean (Soybeans, Chemistry, Technology and Utilization, Edited by K. Liu, page 1-3, history, 1999.). Once precipitation and fermentation techniques were developed, Soybeans were incorporated into the Chinese diet. Heat

inactivation of proteins present in the soybean such as Soybean Trypsin Inhibitor ("STI") and Bowman-Birk Inhibitor ("BBI")during soybean processing renders soybeans edible (reviewed in (Wallace et al., 1971), (Kwok and Niranjan, 1995). It was known that the observed gastric distress is the result of inhibition of protein digestion by trypsin and other digestive proteases by the potent serine protease inhibitors, STI and BBI.

5. The negative effects of native STI to the digestive system are heavily documented. Silva et al (1986) documented morphological alterations of small intestinal epithelium, caused by feeding calves with non-denatured soy proteins. Pancreatic enlargement induced by orally ingested STI was documented and studies by Wilson et al (1978) and Krogdahl et al (1979) and reviewed by Flavin (1982). Liener (1983) summarized similar observations in a publication entitled "Naturally occurring toxicants in foods and their significance in the human diet".

6. These studies and others state that STI should be inactivated when soybeans are processed for nutritional use. Numerous studies were conducted to evaluate the effect of processing conditions on the trypsin inhibitory activity and digestibility of various soy preparations (e.g. Wallace et al, 1971, reviewed in Kwok et al, 1995). Today, soy products marketed for nutritional use are processed (e.g. pasteurized, fermented, or cooked) in order to inactivate STI (see e.g. the book: Soybeans, chemistry, technology and utilization, K. Liu, Ed, 1999).

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: February 8th 2002

K. H. Martin

Katharine Martin